

**MEETING THE ONTARIO WASTE
MANAGEMENT CORPORATION'S NEEDS FOR
TRANSPORTATION AND TRANSFER STATION SERVICES**

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1. INTRODUCTION

1.1 Background

Starting at the time that the Ontario Waste Management Corporation's treatment and disposal facility begins operation and for several years thereafter, as the volume of special wastes processed by the facility grows, some incremental demand for special waste transportation and transfer station services can be expected. Since OWMC will be operating in a market already served by a number of special waste treatment and disposal facilities, a portion of the special wastes processed at the OWMC facility will be those that would have been processed at one of the existing facilities. This portion of OWMC's business will result in little or no incremental demand for transportation and transfer station services. However, the remaining portion of the special wastes processed at the OWMC facility will be accounted for by new business and will, therefore, result in incremental demand for transportation and transfer station services.

New business for the OWMC facility may come from a number of sources. Special wastes that are currently being stored on site because existing facilities cannot handle them may start moving to the OWMC facility. As the volume of special wastes grows due to, for example: growth in industrial output; programs such as the Municipal/Industrial Strategy for Abatement; regulations such as Regulation 309 of the Environmental Protection Act which requires that all generators of special wastes be registered; and stricter enforcement of existing regulations, OWMC can be expected to attract some of the increase in volume to its facility.

The portion of the total volume of special wastes processed by the OWMC facility that will be accounted for by new business and the incremental demand for transportation and transfer station services that results is difficult to estimate. However, the portion will range from zero to 100 percent of the total volume of special wastes processed by OWMC. The volumes that OWMC is planning to process at its facility are: 80 000 tonnes during the first year of operation, which is expected to be 1992, rising to 150 000 tonnes during the fifth year, and 300 000 tonnes during the tenth year.

1.2 Objective

The objective of this study is to determine whether the existing industry is capable of and willing to expand to meet the additional demand for transportation and transfer station services that may arise as a result of OWMC establishing a special waste treatment and disposal facility. Since the incremental volume of special wastes that will require handling (i.e. the new business generated by OWMC) is not known, for the purposes of this study, it will be assumed that all of the special wastes processed by OWMC are incremental and that OWMC reaches its planned operating volumes. This can be referred to as the "maximum-volume" scenario.

To put the maximum-volume scenario into perspective, according to the Ministry of the Environment's Manifest Information System, approximately 854 000 tonnes of special wastes were transported during 1986. The actual volume of special wastes transported off-site for treatment or disposal during 1986 may be more than 854 000 tonnes since not all movements of special wastes are reported to MOE. Therefore, it is reasonable to assume that, at the time that the OWMC facility starts operation; the market size for waste carriers and transfer station operators will be at least 854 000 tonnes per year. The maximum-volume scenario will result in growth of the total market of up to about 10 percent in the year that the OWMC facility is in operation and two to three percent per year over the next 10 years.

1.3 Methodology

The MOE's Manifest Information System was used to compile summary statistics on sources, destinations and volumes of wastes transported in Ontario and to identify the major carriers and transfer station operators.

Interviews were conducted with selected carriers and transfer station operators to determine: if there were any financial, regulatory, geographic or other barriers to expansion; whether the additional demand created by the OWMC facility could be served with existing capacity; if not, whether the industry could grow to meet the additional demand; and any instance where the industry will be unwilling or unable to fill the need for transportation and transfer station services in a manner that is

environmentally acceptable and provides an adequate level of service at reasonable cost.

A combination of in-person and telephone interviews was used. Interviews were carried out with representatives of 10 carriers that, in aggregate, accounted for 40 percent of the total volume (33.6 percent of loads) of special wastes reported on MOE manifests during 1986, and 5 transfer station operators that, in aggregate, accounted for 36.9 percent of the volume (44.5 percent of loads) of special wastes delivered to transfer stations during 1986.

1.4 Report Contents

The next section of the report is a profile of the industry. It contains a brief description of the relationship between generators, carriers, transfer station operators, and treatment and disposal facilities; summary statistics of volumes handled by the industry and an estimate of its growth rate; and some basic information on the major carriers and transfer stations operating in Ontario.

In the third section potential financial, regulatory, geographic, and other barriers to expansion are discussed.

Section four discusses the industry's ability to meet OWMC's needs based upon the interviews with industry representatives.

The conclusions are presented in the final section. Instances in which private industry will be unable or unwilling to meet OWMC's needs for transportation and transfer station services are described in the conclusions.

2. INDUSTRY PROFILE

2.1 Industry Practises

While generators of wastes are ultimately responsible for the safe disposal of their wastes, most generators depend upon the waste management industry to ensure that the wastes are handled in accordance with the various regulations that govern transportation and disposal of wastes. The waste management industry consists of carriers, transfer stations, treatment facilities and disposal sites. In most cases, rather than contracting separately with, for example a carrier, treatment facility, and disposal site, a generator will contract with a waste management company to provide a total waste disposal service. Depending on the size, diversity and cost structure of the waste management company; it may use its own laboratory, truck fleet, transfer stations, treatment facilities, and disposal sites as appropriate; or it may sub-contract some or all of the required services to third parties.

Apart from ensuring that the carrier and the receiver of the wastes -- the transfer station, treatment facility, or disposal site where transfer of ownership of the waste occurs -- are licensed to handle his particular wastes, the generator's main criterion for selecting a waste management company is cost. The cost quoted to a generator is made up of two components: transportation costs and treatment/disposal costs. If either transportation costs or treatment/disposal costs are deemed to be too high, a generator may choose to switch to: on-site treatment; change the production process to reduce the volume of wastes or change their nature; or reclaim, recycle, or re-use the wastes. The decision on how a generator deals with wastes is largely based on two factors: regulation and cost. In most cases a generator will choose the least costly method of disposing of wastes that meets all of the applicable regulations.

2.2 Market Size and Growth Rate

The MOE Manifest Information System provides a good, if somewhat imperfect, indication of the size and growth rate of the special waste market. The volume of

wastes transported under the manifest system between 1979 and 1986 are shown in Table 2.1

Table 2.1

Quantities Transported Under the
Manifest System 1979 - 1986
(tonnes)

Year	Quantity
1979	114 628
1980	227 964
1981	N.A.
1982	229 530
1983	329 540
1984	403 900
1985	538 247
1986	853 816

Source: Ministry of the Environment - Manifest
Information System.

There has been a large increase in the volume of wastes that have been reported on MOE manifests since 1982, but not all of the increase is due to market growth. When Regulation 309 of the Environmental Protection Act came into effect on September 17, 1985, the definitions of transported wastes that must be reported to the MOE manifest system were changed and additional wastes were added to the list. Among the wastes that became subject to the manifest requirements after September 17, 1985, are recycleable materials, landfill leachates, and solids. Since it has not been possible to reconcile the waste definitions used prior to implementation of Regulation 309 with the new waste definitions it is not possible to determine exactly how much of the apparent growth indicated in Table 2.1 is due to the changes in definitions and the scope of wastes covered by the regulation. In addition, some of the increase in the volumes of wastes in the manifest system is believed to be due to more complete reporting of special wastes movements. These factors notwithstanding, it is clear from discussions with representatives of the industry that there has been significant growth in the special waste market in recent years.

Every one of the carriers and transfer station operators that were interviewed reported substantial growth in the volume of special wastes that they handled in the past few years. The lowest annual growth rate reported was 10 to 15 percent and the highest in excess of 100 percent. Virtually all of the others reported annual growth rates in the 20 to 30 percent range. When asked how their growth was achieved, a few of the respondents replied that it was due primarily to an increase in market share. Most of the other respondents attributed their growth to a growing market. Since none of the respondents reported a loss of market share, it is reasonable to assume that the market has been growing. Based upon the manifest data and interviews with industry representatives the volume of special wastes that are transported off-site for disposal (i.e. the market for carriers and transfer station operators) has grown by approximately 20 percent per year since 1982.

All of the respondents cited the generator-registration provision of Regulation 309 as the factor most responsible for growth in the special waste market over the past two years. Under this provision all generators of special wastes in Ontario are required to register with MOE. As part of the registration process, generators must provide a description of each special waste that is produced, the carrier of wastes and the disposal facility that is used. Regulation 309, coupled with an increase in the enforcement of all regulations under the Environmental Protection Act, resulted in a heightened awareness amongst generators of their responsibility for proper disposal of the special wastes that they produce. As a result the volume of special wastes transported off-site for disposal has grown.

The other factors most often cited as being amongst those contributing to market growth are the high economic growth rate in Ontario over the past four to five years and an increase in the volume of wastes moving from the United States to treatment and disposal facilities in Canada. Disposal costs are generally lower in Canada than the United States on an exchange-adjusted basis. Given the cost advantage, the main limitation on the volume of special wastes moving from the United States to privately owned treatment and disposal facilities in Canada are the capabilities of the facilities. As more sophisticated facilities have come on-stream in Canada, the volume of special wastes imported from the United States has increased.

2.3 Industry Structure

With the exception of Tricil Limited, the industry is made up of relatively small companies. The major special waste carriers operating in Ontario, ranked by the number of loads carried during 1986, are shown in Table 2.2. Decom Medical Transportation Systems Inc. carried almost as many loads as Tricil, but handled only a fraction of Tricil's volume. Decom specializes in pathological wastes while Tricil transports all special wastes. Tricil's market share, based upon manifest totals, is about 15 percent. However, if waste oils, most of which are reclaimed or reused, and landfill leachates, which are transported to water pollution control plants, are removed from the total, Tricil's market share is about 20 percent.

The rest of the special waste transportation industry is made up of small for-hire carriers with market shares of less than four percent and private carriers. Can Am Oil/Breslube accounted for 4.21 percent of the waste records, but most of the wastes were used oil that was re-refined or used as a dust suppressant. Woodington Systems Inc. carried close to 10 percent of the total volume, but a large part of it consisted of landfill leachate which was transported to the nearest water pollution control plant.

In addition to the companies listed in Table 2.2 there were 157 carriers that reported one or more waste movements on MOE manifests. They were made up of small special waste carriers (one to two trucks), carriers whose main business is transporting commodities other than special wastes, out-of-province carriers who operate in Ontario on an infrequent basis and private carriers who handle only their own wastes. The smaller carriers will not play a big role in servicing an OWMC facility. If an OWMC facility opened tomorrow, most of the special wastes delivered to it would be handled by the companies listed in Table 2.2.

The carriers fall into two groups: those that service generators of large quantities of special wastes and those that service generators of small quantities. Large quantity generators are typically large manufacturing plants, refineries and the like that produce wastes in tank-truck-load quantities (10 000 to 30 000 litres). The carriers shown in Table 2.2 that account for a high percentage of total volume,

relative to the percentage of waste records, generally serve large quantity generators.

Hospitals, universities, laboratories and the like generate small quantities of wastes. The average load size for carriers that serve this market segment can be as little as 30 to 40 kilograms. Wastes are typically stored in drums or other types of containers that are picked up by vans. The carriers that service this market are those shown in Table 2.2 that account for a small percentage of total volume relative to the percentage of total number of waste records.

Table 2.2

Major Special Waste Carriers, 1986

Carriers	Waste Records			Volume		
	Number	% of Total	Cumulative %	Tonnes	% of Total	Cumulative %
Decom Medical Waste Trans. Systems Inc.	10 237	13.15	13.15	4 030	0.47	0.47
Tricil Ltd. (Mississauga)	7 466	9.59	22.74	120 950	14.17	14.64
Tricil Ltd. (Thorold)	3 637	4.67	27.41	1 588	0.18	14.82
Can Am Oil/Breslube	3 279	4.21	31.62	36 935	4.32	19.14
A & A Liquid Waste Removal	2 706	3.48	35.10	15 494	1.81	20.95
Woodington Systems Inc.	2 693	3.46	38.56	83 503	9.78	30.73
Robertson Pumping Service	2 174	2.79	41.35	22 335	2.62	33.35
Hageman Farms Ltd.	2 068	2.66	44.01	56 573	6.63	39.98
Mac's Liquid Waste Disposal (1982) Ltd.	1 995	2.56	46.57	31 496	3.69	43.67
Safety-Kleen Canada Ltd.	1 972	2.53	49.10	162	0.02	43.69
Dofasco Inc.	1 888	2.43	51.53	27 507	3.22	46.91
Chem-Serve Associates Inc.	1 783	2.29	53.82	878	0.10	47.01
Honey Bee Sanitation Inc.	1 462	1.88	55.70	31 903	3.74	50.75
Buckham Environmental Ltd.	1 392	1.79	57.49	22 321	2.61	53.36
Thomas Waste Removal Ltd.	1 337	1.72	59.21	24 757	2.90	56.26
CPW Disposal Ltd.	1 289	1.66	60.87	5 139	0.60	56.86
Dallas Haul Inc.	1 287	1.66	62.53	32 613	3.82	60.68
Palro Liquid Waste Removal Ltd.	1 230	1.58	64.11	10 934	1.28	61.96
McMaster University	1 138	1.46	65.57	510	0.06	62.02
Harold Marcus Ltd.	1 117	1.43	67.00	24 378	2.86	64.88
Mosaic Chemical Corp.	1 024	1.31	68.31	446	0.05	64.93
Esso Petroleum Canada	983	1.26	69.57	9 920	1.16	66.09
Browning Ferris Industries Ltd.	941	1.21	70.78	151	0.02	66.11
Ron Hicks Trucking	866	1.11	71.89	8 623	1.01	67.12
Frontier Chem. Waste Proc. Inc.	846	1.09	72.98	10 837	1.27	68.39
Quantax Chemical Inc.	830	1.07	74.05	12 741	1.49	69.88
University of Toronto	825	1.06	75.11	30	0.00	69.88
Can Am Solvent Service	697	0.90	76.01	33	0.00	69.88
Eaglebrook Environmental Corp.	664	0.85	76.86	19 650	2.30	72.18
A-1 Sanitation	596	0.77	77.63	5 059	0.59	72.77
Dow Chemical of Canada Ltd.	595	0.76	78.39	5 070	0.59	73.36
Universal Pneumatic Services Ltd.	594	0.76	79.15	5 796	0.68	74.04
Philip Enterprises Inc.	584	0.75	79.90	12 476	1.46	75.50
Municipality of Metro Toronto	528	0.68	80.58	14 626	1.71	77.21
Fielding Chemicals Ltd.	510	0.66	81.24	706	0.08	77.29
Marine Clean Ltd.	490	0.63	81.87	17 649	2.07	79.36
Canflow Services	481	0.62	82.49	10 096	1.18	80.54
Anachemia Solvents Ltd.	480	0.62	83.11	6 859	0.80	81.34
Other	13 149	16.89	100.00	154 162	18.66	100.00

Source:

Ministry of the Environment Manifest Information System.

The major transfer stations in operation in 1986 are shown in Table 2.3.

TABLE 2.3

MAJOR TRANSFER STATION OPERATORS, 1986

OPERATOR	WASTE RECORDS			VOLUME		
	NUMBER	% OF TOTAL	CUMULATIVE %	TONNES	% OF TOTAL	CUMULATIVE %
Decom Medical Waste Trans. Systems Ltd.	7 055	25.88	25.88	1 604	1.37	1.37
Tricil Ltd. (Thorold)	4 192	15.40	41.28	1 927	1.64	3.01
CPW Disposal Ltd.	2 541	9.32	50.60	10 180	8.67	11.68
Tricil Ltd. (Mississauga)	2 444	8.97	59.57	18 555	15.79	27.47
Retek Resource Recovery Inc.	1 829	6.71	66.28	18 957	15.83	43.30
Environmental Management Corp.	1 618	5.94	72.22	10 573	9.00	52.30
Mosaic Chemical Corp.	1 079	3.96	76.18	456	0.39	52.69
O.E. Macdougall Liq. Waste Service	993	3.64	79.82	2 453	2.09	54.78
University of Toronto	826	3.03	82.85	28	0.02	54.80
Philip Enterprises Inc.	631	2.32	85.17	12 944	11.01	65.81
Other	27 260	14.83	100.00	40 177	34.19	100.00

Source:

Ministry of the Environment Manifest Information System.

In addition to the transfer stations listed in Table 2.3 there were 90 other transfer stations in operation in Ontario in 1986. Most of them were private transfer stations operated by electrical utilities, universities, refineries and manufacturers.

Like the carriers, transfer stations can be divided into two groups. Transfer stations serving large quantity generators use large tanks to store liquid wastes. Most bulk transfer stations, as they are commonly referred to, also have facilities for drum storage. Transfer stations that serve small quantity generators generally use drums for storage.

Most of the transfer stations shown in Table 2.3 are associated with one of the carriers shown in Table 2.2. As the industry grows the degree of integration is increasing. Carriers and transfer station operators are becoming waste management companies that offer a complete service that includes some or all of: laboratory

analysis of waste streams, transportation, transfer station services, various levels of treatment, disposal, emergency response, and site restoration.

Most of the operators of bulk transfer stations have established, or are in the process of establishing, laboratories. It has become increasingly important for transfer station operators to know the chemical composition of the wastes that they handle. Once a transfer station operator accepts a load of special waste, ownership of the waste passes from the generator to the transfer station operator. If he is not sure of the chemical composition of the waste, it may cost him considerably more to dispose of the waste than the amount quoted to the generator. Transfer station operators are, therefore, establishing laboratories to protect their interests.

Transfer stations that deal in drums have less of a need for an in-house laboratory since they deal with smaller quantities than bulk transfer stations, and their liability is, therefore, less. Operators of drum transfer stations typically use outside laboratories for chemical analysis.

3. POTENTIAL BARRIERS TO EXPANSION

The potential barriers to expansion of the waste transportation and transfer station services industry fall into two categories: financial and regulatory. While regulations affecting the industry neither explicitly prevent existing companies in the industry from expanding nor bar new entrants, the time and expense incurred in complying with the regulations may be an effective barrier for some companies. Thus, all potential barriers to expansion can be reduced to one basic financial criterion. If a commercial (i.e. for-profit) waste carrier or transfer station operator identifies a new business opportunity, it will expand to take advantage of the opportunity if the new business is expected to be profitable.

3.1 Regulatory Barriers

The main pieces of legislation that affect the industry are the Federal Transportation of Dangerous Goods Act; its provincial counterpart, the Dangerous

Goods Transportation Act; the Provincial Environmental Protection Act and the regulations to the foregoing. The potential regulatory barriers to expansion of the industry are described below.

3.1.1 The Transportation of Dangerous Goods Act

The Transportation of Dangerous Goods Act applies to all handling and transporting of dangerous goods, including dangerous wastes. As a piece of Federal legislation; the Act and its regulations apply only to shipments that cross provincial or international borders and other shipments that are under Federal jurisdiction. The Dangerous Goods Transportation Act (Ontario) in effect applies the Transportation of Dangerous Goods Act (Canada) and its regulations to handling and shipment of dangerous goods within Ontario.

The main features of the legislation which affect carriers of dangerous wastes are:

- o Carriers are subject to specified reporting and clean-up requirements in the event of a spill.
- o Shipments must be accompanied by a manifest that contains, amongst other information, the name and address of the shipper, carrier and receiver and the type and quantity of goods carried. Copies of the manifest must be filed with the appropriate authority.
- o Carriers must comply with regulations that specify packaging and labelling requirements and type, number and form of placards that must be displayed on vehicles.
- o There are a number of safety standards that must be met including requirements for transborder shipment of wastes.
- o Persons who handle or transport dangerous wastes must be trained as specified in the regulations.
- o Equipment standards are not yet finalized, but are expected in the future.

Not all "special" wastes (i.e. hazardous and liquid industrial wastes) are "dangerous" wastes as defined in the regulations to the Transportation of Dangerous Goods Act (Canada). However, the Environmental Protection Act (Ontario) and Regulation 309,

effectively apply most of the provisions of the Transportation of Dangerous Goods Act (Canada) to special wastes.

3.1.2 The Environmental Protection Act

The Environmental Protection Act is a comprehensive act, the stated purpose of which is "to provide for the protection and conservation of the natural environment".

The pieces of legislation that most affect the special waste transportation and transfer station services industry are Part V - Waste Management and Part IX Spills of the Environmental Protection Act and Regulation 309. The effects of each is described below.

3.1.2.1 Part V - Waste Management

The essential requirement of Part V - Waste Management, is that only those carriers and transfer station operators who have been granted a certificate of approval by the Ministry of the Environment can legally handle special wastes.

The process of obtaining a certificate of approval for a carrier is relatively straightforward. The applicant provides to the MOE, amongst other information, details of equipment to be used, type and volumes of waste streams that will be handled, the origin of the waste streams and the disposal facilities that will be utilized. A certificate of approval is generally issued if the applicant carries at least one million dollars of liability insurance, there is evidence that proper training has been carried out and MOE is satisfied that all applicable regulations will be met.

There is provision in Part V to call a public meeting to allow members of the public to air their views on whether or not a certificate of approval should be granted, but no public meetings related to an application by a carrier have been held to date.

Carriers of pathological wastes and polychlorinated biphenyls (PCBs) are required to post an irrevocable letter of guarantee for \$20 000 as a condition of maintaining their certificate of approval. Carriers of other wastes are not currently required to post a letter of guarantee. However, MOE's plans are eventually to require that all carriers post a letter of guarantee, starting with carriers of the most hazardous wastes.¹ The amount of the letter of guarantee will be \$20 000 for all carriers regardless of size.

In order for a bank to issue a letter of guarantee, it must be backed by a cash deposit or high quality security. The letter of guarantee will not be drawn upon as long as the carrier continues to comply with all applicable regulations. However, the effect of this requirement is to tie up \$20 000 of the carrier's capital for as long as he wishes to maintain a valid certificate of approval.

An applicant for a certificate of approval to operate a special waste transfer station must provide the MOE with, amongst other information, details on the site (location, land use, zoning, etc.), the types and volumes of wastes that will be handled, municipalities served, type of storage used and storage capacity.

In contrast with applicants for a certificate of approval for a carrier, an applicant for a certificate of approval for a transfer station is more likely to have to appear before a public hearing. Such public hearings are called at the discretion of the MOE regional director, and are held before the Environmental Assessment Board. The main criteria that a regional director uses to determine if a public hearing is to be held are: zoning of the proposed site, the degree of public concern, and the position of the local municipality. If a public hearing is requested by the municipality, one will be held. The public hearings generally last a day or two.

1. Source is a conversation with Mr. D. Andrijew of the Ministry of the Environment.

While the public hearing itself takes relatively little time, an applicant must be prepared to defend his application on the basis of need for the facility, that the facility will be operated in an environmentally safe manner, and that it will not disrupt the neighborhood.

All applicants for new certificates of approval for transfer stations must provide a letter of guarantee before a certificate will be issued. The amount of the letter of guarantee is based on the estimated cost to clean up a worst-case spill on the site. For example, if the applicant is proposing a facility with a storage capacity of one million litres of wastes that would cost \$0.25 per litre to clean up in the event that the entire amount was spilled, the amount of the letter of guarantee would be \$250 000.

The MOE is in the process of assessing current transfer station facilities, and has asked some operators to post letters of guarantee. The MOE's long term goal is to require that all transfer station operators post letters of guarantee as a condition of retaining a valid certificate of approval.²

3.1.2.2 Part IX - Spills

Part IX - Spills, the so-called "Spills Bill", came into effect on November 29, 1985.

The main features of Part IX are:

- o Spills must be reported immediately to the MOE, the municipality in which the spill occurs, to the owner of the spilled material and to the person having control of the material.
- o The people responsible are required to do everything practicable to immediately restore the environment to its natural condition.
- o MOE officials are empowered to assume control of the spill situation.
- o Anyone adversely affected by a spill is given the right to compensation from the owner of the spilled material and the person having control of it.

2. Ibid.

- o The right to compensation from the government is also established and the Environmental Compensation Corporation was established to administer the compensation.

Although there was a great deal of opposition from generators and carriers to the Spills Bill, its implementation has had little practical effect on the industry. One possible exception is that it has made environmental liability insurance more difficult to obtain.

3.1.2.3 Regulation 309 - Waste Management.

Regulation 309, which came into effect on September 17, 1985, resulted in a number of changes in the special waste transportation and transfer station services industry. The most significant change was the increase in the volume of wastes handled by the industry. As explained earlier the increase was due to two sections of Regulation 309: Designation and Exemption of Wastes which expanded the list of wastes that are subject to the Environmental Protection Act and its regulations, and Generator Registration which requires, *inter alia*, that all generators of designated wastes register with MOE.

Three sections of Regulation 309 consist of much of the detail needed to administer the certificate of approval process for special waste carriers and transfer station operators. Section 4, Classification and Exemption of Waste Disposal Sites, classifies transfer stations as waste disposal sites. Section 6, Classification and Exemption of Waste Management Systems, classifies carriers as waste management systems. Section 13 prescribes standards for the operation of waste management systems. Standards for the operation of transfer stations are not included in Regulation 309.

Finally, Regulation 309 specifies, in detail, the operation of the manifest system.

3.2 Financial Barriers

As the level of sophistication of the industry has risen, the capital requirements for carriers and transfer station operators has increased. Letters of guarantee will soon be required from carriers and transfer station operators (See section 3.1.2.1). A few years ago, an owner-operator could acquire a vacuum truck and enter the business with \$20 000 of capital or less. Today, he would require \$20 000 for a letter of guarantee to obtain a certificate of approval. Insurance costs have risen dramatically in recent years. For example, one carrier reported that his insurance costs rose from the equivalent of 1.25 percent of revenues to 12 percent of revenues. Insurance costs of \$6 000 to \$7 000 per truck per year are typical for carriers.

The bulk of a carrier's costs will be for rolling stock. Brief descriptions of commonly used trucks and trailers and their respective costs are as follows:

- o Vacuum Truck - a truck equipped with an 11 000 litre (2 400 gallon) vacuum tank, vacuum pump and motor, hoses and associated equipment. Cost for a top-of-the-line unit is \$160 000. Depending on the nature of the substance to be vacuumed, the price could drop to the \$115 000 to \$125 000 range.
- o Vacuum Trailer - A semi-trailer with a 27 000 litre (6 000 gallon) vacuum tank, vacuum pump and motor, hoses, etc. The cost would depend upon the substance to be vacuumed; typically \$80 000 to \$100 000.
- o Tractor - to haul the above. Costs will vary depending on the options selected, range is \$70 000 to \$100 000.
- o Pup Trailer - full trailer for towing by a vacuum truck with steerable front axle, 11 000 litre (6 000 gallon) vacuum tank, but no vacuum pump or motor. The cost of pup trailer is \$30 000 to \$35 000.

In addition to rolling stock a carrier's costs will include safety equipment, office facilities and land.

The costs to establish a transfer station vary greatly depending on the type and quantity of wastes to be handled. The major costs for a drum transfer station are for land and buildings. For a facility with storage space of 300 to 400 "45-gallon" drums, capital costs will be approximately \$250 000. The time

the inventory is about two months. Therefore, such a facility would have an annual capacity of approximately 20 000 drums.

The approximate cost to establish a bulk transfer station consisting of a tank farm with storage capacity of 680 000 litres (150 000 gallons) is \$600 000. The inventory turnover rate for a bulk transfer station is also about two months. Therefore, the annual capacity would be approximately 4 million litres (900 000 gallons).

A well equipped laboratory will cost \$200 000 plus. As explained earlier, an in-house laboratory is becoming a virtual necessity for bulk transfer station operators.

3.3 Other Barriers

Other potential barriers to serving the Ontario market that were discussed with industry representatives are:

- o Availability of qualified people needed for expansion.
- o Geography - Any problems in serving all of Ontario, especially Northern Ontario?
- o Waste types - Any waste types that cannot be handled?

4. THE INDUSTRY'S ABILITY TO MEET OWMC's NEEDS

The discussion that follows is based entirely upon interviews with special waste carriers and transfer station operators. At the beginning of each interview, some background information on OWMC's planned treatment and disposal facility and the purpose of this study was provided. In particular, interviewees were told that in 1992 the demand for their services could increase by up to 10 percent as a result of OWMC opening its facility. In the following nine years demand could increase by two to three percent per year as the OWMC facility reached its target capacity. Interviewees were then asked a series of questions to determine if they would be able to meet the demand.

The first question was whether they could foresee any problems in expanding the volume of special wastes handled by 10 percent in one year. The answer from both carriers and transfer station operators was unanimous. All of them have been growing by at least 10 percent per year over the past few years, and none of the respondents anticipated any problems in maintaining their growth rates if the market justified it. In all cases 10 percent growth could be handled with existing facilities. In a few cases additional staff would have to be hired. A carrier's capacity can be expanded quickly by simply scheduling more evening and weekend trips. Transfer station capacity can also be expanded quickly by increasing the number of drums used for storage or by reducing the length of time wastes are stored, i.e. increasing inventory turnover.

There were two instances cited in which an OWMC facility would lead to a requirement for less, not more, capacity. In the first instance, transfer station operators are often required to keep wastes in storage for long periods of time due to capacity constraints at the waste disposal sites. During peak periods, a transfer station operator may have to wait several weeks before he is given a delivery slot by a disposal site operator. This is a particular problem in the case of wastes that can be accepted by only one or two disposal sites. Assuming that the OWMC facility helps to alleviate this problem, transfer station operators will be able to increase their inventory turnover rate and, in so doing, their annual capacity.

The second instance relates to special wastes that are currently shipped to out-of-province disposal sites because there are no facilities in Ontario that are licensed to handle the particular wastes. Since the OWMC facility will be able to handle all special wastes and since it will be located closer to generators than the out-of-province disposal sites currently being used, some portion of the wastes currently leaving the province will be diverted to the OWMC facility. (The actual fate of wastes will depend largely on total costs which are made up of transportation and disposal costs, but since OWMC is planning to target wastes that are leaving the province we assume that OWMC rates will be competitive.) A carrier that currently hauls significant quantities of wastes from Ontario to United States disposal sites stated that he may have excess capacity once the OWMC facility opens, due to shorter hauling distances. While this example is not

consistent with the maximum volume scenario -- that all wastes transported to the OWMC facility are incremental -- it likely reflects what will happen in practice.

All of the potential barriers to expansion of the industry, described in the previous section were discussed with the industry representatives. While some of them were considered burdens, none were considered barriers. For example, meeting the regulations imposed a burden in terms of the time and costs to obtain certificates of approval, additional administrative costs and the amount of training required. In addition, carriers are finding it necessary to spend considerable time with generators explaining the regulations and their implications. But none of the interviewees saw the regulations as barriers to expansion or, for that matter, as being unreasonable. When asked if they would be willing to go through the process of applying for a certificate of approval to operate a transfer station in, for example, Northern Ontario if there was a demand for such a service, the answer universally given by transfer station operators was, "absolutely".

The only problem that was raised with respect to regulations is that they are not consistently applied from region to region. Much of the administration and enforcement of the regulations is handled by the regional offices of the MOE. Differences from region to region in how regulations are applied has lead to some inequities. For example, in one region a transfer station operator has been asked to post a \$250 000 letter of guarantee as a closure fund. In another region a transfer station operator was able to meet MOE's requirements by purchasing \$2 000 000 of environmental liability insurance. In a third region a new certificate of approval for a transfer station was issued with no requirement for a financial guarantee.

To date the industry has had no problems with raising the capital needed for expansion. If carriers and transfer station operators are required to provide financial guarantees to cover costs in the event of a spill or closure of a facility, there will be that much less capital available for expansion. However, this is not expected to create a large enough demand on capital that expansion of the industry will be constrained.

Attracting qualified people has not been a problem. Drivers and other operating personnel can be recruited from the unskilled labor pool and put to work after about three weeks of training. The waste management industry has become one of the largest employers of community college graduates in chemical technology. No shortage of chemical technologists is anticipated. One respondent expressed some reservation about the future availability of management personnel, although he was somewhat encouraged by the fact that MBA graduates are beginning to approach waste management companies for employment.

All regions of Ontario are currently being served by carriers and transfer stations. However, since the private sector responds to the demand for its services (as opposed to creating the demand), the level of service offered and costs vary from region to region. In areas of high demand, such as South Central and Southwestern Ontario, there are a number of licensed carriers and transfer stations, and costs to generators for collection and transportation are relatively low. The opposite is the case in Eastern and Northern Ontario: there are far fewer generators of special waste, they are generally smaller and they are geographically dispersed. There are few licensed carriers and transfer stations in Eastern and Northern Ontario and virtually no licensed treatment and disposal facilities. A number of carriers serve these regions, but they are finding it difficult to schedule pick ups and consolidate loads so that trucks are full for the return trip to disposal facilities in southern Ontario. As a result, collection and transportation costs to serve Eastern and Northern Ontario are relatively high.

At least two waste management companies have looked into the feasibility of establishing transfer stations in Sudbury, Thunder Bay, and other locations in Eastern and Northern Ontario. They determined that not enough wastes could be attracted to transfer stations in these regions to enable them to operate profitably. The waste management companies stated that they believed that there are enough special wastes generated in Eastern and Northern Ontario to support one or more transfer stations, but unless there is stricter enforcement of existing regulations, generators will not incur the costs of sending their special wastes to the transfer stations. The transfer station operator would act only as an intermediary, and would have to charge generators for outbound transportation and final treatment and disposal costs.

When asked if there were any special wastes that they would not be interested in handling, carriers and transfer station operators mentioned PCB's, pathological wastes and radioactive wastes. However, this is not expected to be a problem in terms of meeting OWMC's needs. There is at least one carrier that has a certificate of approval that allows it to carry PCB's and at least two other carriers are planning to apply for an amendment to their certificates to allow them to carry PCB's. Most carriers are not interested in pathological wastes because it is a specialized market that is already well served. Radioactive wastes are not an issue since the OWMC facility will not be handling them.

5. CONCLUSION

The answer to the question posed at the beginning of this report, "Is the existing industry capable of and willing to expand to meet the additional demand for transportation and transfer station services that may arise as a result of OWMC establishing a special waste treatment and disposal facility?" is a qualified "yes".

- All of the apparent demand in all regions of Ontario for special waste
- transportation and transfer station services is being met, and the private sector is
- willing and able to expand to meet the anticipated growth in apparent demand.

However, the private sector is not able to provide the same level of services to Eastern and Northern Ontario as it can to regions in Southern Ontario.

While all special waste generators in Eastern and Northern Ontario who wish to avail themselves of transportation and transfer station services are being served there is some evidence to suggest that other generators in these regions are not disposing of their special wastes in a manner that is environmentally acceptable. This is occurring, at least in part, because the level of service provided to Eastern and Northern Ontario is not as high as in regions of Southern Ontario and the collection and transportation costs are higher. If OWMC's objectives are to raise the general level of special waste management practices in Eastern and Northern Ontario and/or to attract special wastes from these regions to its facility, it will have to take the initiative to develop the special waste collection and transportation infrastructure. It is unlikely that transfer stations, carriers, laboratories, and

other parts of the infrastructure could operate profitably, at least in the early stages of development of the infrastructure.

Control over collection and transportation is an important element of the marketing strategy of waste management companies. In order for OWMC to compete with private waste management companies it will have to offer generators a complete package of services including collection and transportation. Since OWMC has indicated that it has no intention of entering the transportation and transfer station businesses in areas where the private sector can provide adequate levels of service, it is necessary for OWMC to prepare a plan to obtain the services that is equitable to the private sector and is consistent with its marketing strategy. —